

I. Listing of the Claims

This listing of Claims replaces without prejudice all prior versions and listing of Claims in the application.

1. (Currently amended) A multi-wavelength laser, comprising:

(a) a pump laser source;

(b) an optical gain module (OGM) for receiving the output of the laser sources;

(c) a periodic band-pass filter ~~(PBF)~~ (BPF) in a feedback loop between output and input of the optical gain module; and

(d) the output of the OGM being an output of said multi-wavelength laser;

wherein the OGM comprises a gain element and a gain flattening filter between the gain element and the periodic BPF.

2. (Previously cancelled)

3. (Previously presented) A multi-wavelength laser according to Claim 1, further comprising:

an output coupler at the output of the OGM configured to send part of the OGM output to the periodic band-pass filter, and part of the output of the OGM as the output of the multi-wavelength laser; and

an input coupler at the input of the OGM configured to couple both a pump signal from the pump laser source, and an output of the periodic band-pass filter into the OGM, the OGM having no other optical input signal.

4. (Previously presented) A multi-wavelength laser according to Claim 1, wherein the periodic bandpass filter comprises a Mach-Zehnder interferometer.

5. (Previously presented) A multi-wavelength source according to Claim 1, wherein at least two lasing sources are realized in different bands of said periodic band-pass filter.

6. (Previously presented) A multi-wavelength source according to Claim 1, further comprising polarization control means in the feedback loop to enhance effective feedback of signals in periodic bands of the periodic band-pass filter.

7. (Previously presented) A multi-wavelength source according to Claim 1, wherein the periodic bandpass filter is tuned to an ITU frequency grid to form a standard multi-wavelength laser source.

8. (Currently amended) A method of generating a multi-wavelength laser signal comprising:

operating an optical gain medium with a feedback input and a pump laser source, and no other input;

feeding back a portion of an output of the optical gain medium through a gain-flattening filter and periodic band-pass filter, and passing an output of the periodic band-pass filter to the feedback input;

whereby a lasing source is realized in at least two bands of the periodic band-pass filter such that a laser signal having at least two wavelengths is generated.